Oracle® Enterprise Manager Ops Center

Keeping Your Firmware Up-to-Date

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This guide provides an end-to-end example for how to use Oracle Enterprise Manager Ops Center.

Introduction

This guide describes how to keep your firmware up-to-date in your data center.

Oracle Enterprise Manager Ops Center uses firmware profiles to provision, or update firmware on an asset. In this guide, you will be taken through the steps of how to download firmware images, run a firmware compliance report, and update the firmware in Oracle Enterprise Manager Ops Center.

Oracle Enterprise Manager Ops Center supports a wide variety of hardware resources. It supports the firmware update of components such as RAID Controllers, Expanders, Disks and PDUs. You can now manage the firmware for a variety of hardware resources in Oracle Enterprise Manager Ops Center.

What You Will Need

You need the following to update the firmware in your systems:

- Enterprise Controller installed and configured in connected mode.
- A local software library setup to download the latest firmware updates.
- Discover and manage the server hardware for which you need to update the firmware.
- If you are uploading the firmware image, then the firmware image and the firmware metadata.

You require the following roles to complete the procedures:

- **Profile and plan admin**: Create and manage the firmware profiles and plans.
- Storage admin: Setup the initial software library.
- **Update admin**: Update the firmware.

Updating Your Firmware

Complete the following tasks in this example to update the firmware using Oracle Enterprise Manager Ops Center:

Storage Library Setup and Downloading Firmware Images



- Uploading Firmware Images
- Run a Firmware Compliance Report
- Apply the Firmware Deployment Plan

Storage Library Setup and Downloading Firmware Images

When you install and configure the Enterprise Controller, there is an Initial EC Library which is set as the default storage library to download the images from Knowledge Base.

Name 🔺	Туре	URL	Size (GB)
Initial EC Library	Local	file:///var/opt/sun/xvm/locallib/s	133.88
Linux, Solaris 8-10 Software U	Local	file:///var/opt/sun/xvm/locallib/s	133.88
nfs://192.0.2.11:2049/xvm/lib1	NAS	nfs://192.0.2.11:2049/xvm/lib1	115.24
nfs:// 192.0.2.11:2049/xvm/lib2	NAS	nfs://192.0.2.11:2049/xvm/lib2	115.24

An automatic job is scheduled at run at 3.00 a.m daily to download the latest firmware images. The Enterprise Controller time is followed for the download schedule.

For the first time, the job takes around 1 to 2 hours to complete. Thereafter, only the latest released version of a firmware image are downloaded. You can view all the firmware images in the default library. You can also select the scheduled job and run the firmware image download job any time.

😻 Jobs	➡∎ 140		<mark>a</mark> g 0	9 8	<u> </u>	0	3
	× 👧 🌜	la 🗄					
Status	Job ID	Job Ty	rpe		Job Name	Mod	le
0	2	Scheo	duled Product N	vletadata Update	Product Me	tadata Up 🌼	
0	1	OCDo	ctor-Schedule	d Update	OCDoctor-l	Jpdate 🔶 🍵	
0	9	Firmw	vare download		Cron sched	luledFirm 💠	

🌉 Initial EC Library										
Summary Incider	its M	lonitoring								
Library Name: Initial	EC Library				Added	: 01/17/	2012 9:14:12 pm IS	ST		
Library Description: file://	/var/opt/sun/	/xvm/locallib/	swlib0		Modified	: 01/20/	2012 1:04:45 pm IS	ST		
					State	: ОК				
					Access	: Read-\	Write			
URL: file://	/var/opt/sun/	/xvm/locallib/	swlib0							
Size: 52 G	в									
Head Chases	-									
Used Space:	95%									
Library Contents										
The second se								_		_
Service Processor Fi	rmware (1	11)								
📄 🗙 🚊 📼							Ø Searc	:h 🔻	>	(P
FW Image Name 🔺	Version	Туре		Description			Depends On		Target Type	,
FFXCP1101.tar.gz	1101	XCP		XCP Firmwa	are for SPARC M4000-M50	100 servi			Server	^
FFXCP1102.tar.gz	1102	XCP		XCP Firmwa	are for SPARC M4000-M50	100 servi			Server	
IKXCP1102.tar.gz	1102	XCP		XCP Firmwa	are for SPARC M3000 serv	/ers			Server	
ILOM-3.0.16.11_r65962_SL	3.0.16.11	SP-Firmwa	are	Sun Netra >	6270M2 SVV 1.1 ILOM/BIO	S bundle			Server	
ILOM-3_0_10_10_c_r6770:	3.0.10.10.c	SP-Firmwa	are	X6275 SW	2.7 ILOM/BIOS bundle				Server	
1.014.0.0.40.40		CD Einer	are	X6275 M2 S	W13LOM/BIOS bundle				Server	
ILOM-3_0_10_12_C_r6769:	3.0.10.12.c	SP-FITTING		NOLTO MALC						
ILOM-3_0_10_12_C_r6769: ILOM-3_0_10_13_b_r6227:	3.0.10.12.c 3.0.10.13.b	SP-Firmwa	are	X4540 SW	2.3.2 ILOM/BIOS bundle				Server	
ILOM-3_0_10_12_c_r6769 ILOM-3_0_10_13_b_r6227:	3.0.10.12.c 3.0.10.13.b	SP-Firmwa	are	X4540 SW	2.3.2 ILOM/BIOS bundle				Server	~
ILOM-3_0_10_12_6_F6769	3.0.10.12.c 3.0.10.13.b	SP-Firmwa	are	X4540 SW	2.3.2 ILOM/BIOS bundle				Server	~
LOM-3_0_10_12_c_r6769 LOM-3_0_10_13_b_r6227:	3.0.10.12.c 3.0.10.13.b e	SP-Firmwa	are	X4540 SW	2.3.2 ILOM/BIOS bundle				Server	~
LLUM-3_0_10_12_0_r638: ILOM-3_0_10_13_b_r6227: ★ Dimponent Firmwar	3.0.10.12.c 3.0.10.13.b e	SP-Firmwa	are	X4540 SW	2.3.2 ILOM/BIOS bundle				Server	•

For every firmware image downloaded, a firmware profile and plan are created by default. You can view the default firmware profiles and plans in the Plan Management section.



Select a server to find the latest firmware profiles available for it.

Uploading Firmware Images

You can also upload firmware images to the storage libraries. It is required that the firmware image to be uploaded has the metadata details or you have to provide the firmware image metadata details during upload. See *Oracle Enterprise Manager Ops Center Feature Reference Guide* or more information about uploading firmware images.

- 1. Select a software library to which you want to upload the firmware image.
- 2. Click Upload Firmware in the Actions pane.

» A	ctions
~	Operate
	Edit Library Attributes
1	Upload ISO Image
	Import Image
<u> </u>	Download OS Image
FW	Upload Firmware
×	Remove NAS Library
	New NAS Software Library
×	Place In Maintenance Mode
8	Remove From Maintenance Mode
B	Apply a Monitoring Profile
	Extract a Monitoring Policy

3. You can have the firmware file on the Enterprise Controller, or on the local host where you are running the UI. Select the firmware file from that location.



4. Select the file and click Upload File.

Define Firmwa	re		* Indicates Requir	red Field
Use the Browse b	utton to select the image file. T	hen click the Upl	oad File button to	upload.
 Load Firmware fi Load Firmware fi 	rom the Enterprise Controller rom the local host			
File Name:	D:\Delta\139444-16.zip		Browse	
	Upload File	< Previous	Next >	Cancel
	U	🖞 Sear	ch 🔻	XQ

5. The selected image starts uploading. The upload progress status appears.

Define Firmware	* Indicates Required Field
Firmware upload is in progress	
19%	

6. If the uploaded firmware image has the firmware metadata details, then the details of the firmware image are taken from the metadata. If the image does not have metadata, then you must enter the details of the firmware.

Define Firmware	* Indicate:	Required Field
You have uploaded a firmw	vare with no metadata. Enter the firmware information manu	ally.
* Firmware Name:	new_frm_upload_39444-16]
Description:		
Target Type:	Server Chassis Switch PDU	

- 7. Enter the name of the firmware image and description.
- 8. Select the target hardware type to which the firmware image is applicable.

Click Next.

9. Depending on the selected target type, all the available platforms are listed. From the README file of the firmware image, you can view the list of supported platforms. Select the platforms and move to the **Supported Platforms** list.

Click Next.

Select Platforms			
Select the platforms or models that the firmw	vare	e ima	ge supports.
Select the platforms or models that the firmwork Available Platforms Sun Netra X6270 M2 server module Sun Netra X6270 Server Module Sun SPARC Enterprise T1000 Server Sun SPARC Enterprise T3120 Server Sun SPARC Enterprise T5220 Server Sun SPARC Enterprise T5440 Server T5440 2x6C 1.2GHZ 32GB 2X146 SU T5440 2x8C 1.4GHZ 32GB 2X146 SU T5440 4x8C 1.4GHZ 128GB 2-146 T5440 4x8C 1.4GHz 128GB 2-146 T6300 1.2GHZ 8core N1 & 16GB T6300 1.4GHZ 8core N1 & 32GB		• ima • ● • ● • ●	ge supports. * Supported Platforms Sun SPARC Enterprise T5140 Server Sun SPARC Enterprise T5240 Server
<			

10. Specify the following information for the firmware:

- Specify the type and version of the firmware image. The version number of the firmware image must match the version number of the firmware image file. For example, the uploaded firmware image version is 7.2.11.
- If the firmware image is dependent on any other firmware image, then select those images from the list. In this example, it is not dependent on any other firmware image, therefore select **None**.
- If the firmware README file states that the server must be shutdown before updating the service processor, then select **Power Off**. You must shut down the server before you provision the firmware.
- If the server requires a reboot after updating the service processor, then select the option to reboot the system after the firmware update.

Specify Parameters	* Indicates Required Field			
Specify the parameters for	the firmware image.			
* Firmware Type:	System-Firmware	*		
* Version:	7.2.11			
Depends On:	None	v		
	Requires Host Power Off			
	Requires Host Reboot After Update			

Click Next.

11. Review the summary of information provided for the firmware and click **Finish** to upload the firmware.

Summary	
File URL:	file:///var/tmp/139444-16.zip-4
Firmware Name:	new_frmwr_up_39444-16
Description:	
Target Type:	Server
Supported Platforms:	Sun SPARC Enterprise T5140 Server, Sun SPARC Enterprise T5240 Server
Firmware Type:	System-Firmware
Version:	7.2.11
Depends On:	None
Requires Host Power Off:	Yes
Requires Host Reboot After Update:	No

The firmware image is uploaded onto the selected software library.

Jublic_nfs1	idents	Monitoring					2
Service Processo	or Firmwar	e (1)					
🕞 🗙 💆 📼				\$	Search 🝷		×P
FW Image Name 🔺	Version	Туре	Description	Dep	oends On	Target Type	
new_frmvvr_up_39444	7.2.11	System-Firmw	18			Server	

When you upload a firmware image, a default firmware profile and deployment plan is automatically created.



You can edit, copy or duplicate this firmware profile or the deployment plan, and apply the plan on one or many servers.

Run a Firmware Compliance Report

The advantage of running a firmware compliance report is to identify the condition of the firmware on a specific asset or group of assets.

Select on the targets for which you want to run the compliance report. If your servers are already grouped according to the server type, then select the group to run the report.

- 1. Select **Reports** from the Navigation pane.
- 2. Select Firmware Reports option in the Reports section.
- **3.** Click **Create Firmware Report** in the Actions pane.

The Create Firmware Report wizard is displayed.

- **4.** Define the following parameters for the report:
 - Name and Description for the report.
 - Select the firmware profile to which you want to compare the targets' firmware.
 - Select the option to view the report in CSV and PDF formats also.
 - Deselect the **Create Schedule** option to run the job immediately.

Oracle Enterprise Manager Ops Center - Create	e Firmware Report			
Create Firmware Report				
Steps Help	Define Report F	Parameters		
 Define Report Parameters Select Targets 	* Report Name:		Schedule	✓ Create Schedule
3. Schedule	Description:		Output Format	CSV
4. Summary				PDF
]	
	* Profile:	Select Profile		*

Click **Next** to select the targets.

5. Select the target assets from the list. You can even select a group of servers.

Available Items			Target List(2)
Assets	Product Name	Descriptic	Assets 🔺
🗃 🚂 All Assets		SystemG	ocbrm-t5140-1
🖻 🔚 Servers		ServerP:	xvmbrm-t5140-2
🖃 🔛 ocbrm-t5140-1	Sun SPARC Enterp	or Server 📃	
☐ 192-188-18-10	Virtual Hosts	LDomXVI	
192-168-18-10	Solaris 10 Operatii	nç Operatir	
😑 1 🕞 🔒	VirtualMachine	LDomVirt	
in 100 168 18 33	Coloria 10 Consulti		
	Add to	o Target List	Remove from Target List

Click Next to view the summary of report parameters.

6. Review the report parameters and click Run and Close.

When the job is completed, the status of the report is displayed under Report Results.

🔄 Report Results		
🔒 🖻 🐵 🖶		Search 🔹 🗙 🔎
Ownel Status Report Name	Description	Report Type Run Date 🗸 🥌
root 🏑 FirmComp	T5140 Servers	Firmware Complia 01/21/2012 10:00
		~

Select the result and click the Interactive icon to view the results on the UI. The report result is displayed.

21/2012 10:0 40 Servers Report Par- eport (2)	10:19 pm IST ameters				Com Status: Suc Con	npliance Rep cessful But npliant	ort Not
40 Servers Report Par- eport (2)	ameters				Status: Suc Con	cessful But npliant	Not
Report Par- eport (2)	ameters						
eport (2)							
					Search	•	× P
			Status				~
			Not Compliant				
			Not Compliant				
							~
	Colombo d Townshi						
Applicable co	Selected Targets	(1)					
					Search	•	×P
get	Model	Firmware Type	Current Version	Proposed Version	Required Firmware Packages	Status	
ver	System-Firmware	7.2.7.d	7.4.2	Sun System Firm	Not Compliant		_
							~
				E	Inter Design Des		
	Applicable to jet ver	Applicable to Selected Targets let Model ver System-Firmware	Applicable to Selected Targets (1) jet Model Firmware Type ver System-Firmware 7.2.7.d	Status Not Compliant Not Compliant Applicable to Selected Targets (1) jet Model Firmware Type Current Version ver System-Firmware 7.2.7.d 7.4.2	Status Not Compliant Applicable to Selected Targets (1) iet Model Firmware Type Current Version Proposed Version ver System-Firmware 7.2.7.d 7.4.2 Sun_System_Firm	Status Not Compliant Applicable to Selected Targets (1) Search ret Model Firmware Type Current Version Proposed Version Required Firmware Packages ver System-Firmware 7.2.7.d 7.4.2 Sun_System_Firm Not Compliant	Status Not Compliant Not Compliant Applicable to Selected Targets (1) Search * Itel Model Firmware Type Current Version Proposed Version Required Firmware Packages Status ver System-Firmware 7.2.7.d 7.4.2 Sun_System_Firm Not Compliant Compliant

Apply the Firmware Deployment Plan

From the report result, you can view the servers that are compliant and not compliant with the selected firmware profile. You can update the firmware using one of the following methods:

- To update all the Not Compliant servers, click **Execute Job** in the report result window.
- To update only selected servers, apply the firmware deployment plan on selected targets.

The following procedure describes how to apply the firmware deployment plan on the selected servers:

- 1. Shut down the server gracefully. Most of the firmware update requires that the server is not in running state when updating the firmware. The firmware image contains the power off command which results in a hard shut down of the server.
- **2.** To apply the firmware deployment plan on the selected targets, select the plan from the Plan Management section, and click **Apply Deployment Plan**.
- **3.** Select the targets on which you want to apply the plan. Apply the plan with minimal interaction as you do not want to change any parameters of the plan and the profile.

If you are trying to install a firmware version lower than the existing version on the server, then you must edit the profile or apply the plan with the option to override the values. In the firmware profile, select the option **Force Downgrade** for a successful update firmware job.

Available Items			Target List(2)
Assets Assets All Assets Contempts140-1 Contempts140-1 Contempts140-1 Contempts140-1 Contempts140-1 Contempts140-1 Contempts140-1 Contempts140 Co	Product Name Sun SPARC Enterp Virtual Hosts Solaris 10 Operatin VirtualMachine	Description SystemGroup ServerPseudoPagir r Server LDomXVMServer (OperatingSystem LDomVirtServer	Assets A ocbrm-t5140-1 xvmbrm-t5140-2
2-		Add to Target List	Remove from Target List

4. Schedule to run the job now and click **Apply** to run the update firmware job on the selected targets.

Summary	
The following values will be applied	to the targets.
Force Reinstall:	No
Force Downgrade:	No
Reset Service Processor:	No
Firmware Image(s):	Sun_System_Firmware-7_4_2-SPARC_Enterprise_T5140+T5240.pkg
	< Previous Apply Cancel

Run the update firmware job and view the hardware summary for the updated firmware image details.

You can now obtain firmware images and use them to update your hardware assets in Oracle Enterprise Manager Ops Center. No matter on how many assets you want to provision firmware, a consistent firmware image provisioning is achieved using the firmware profiles and deployment plans.

What's Next?

You can provision operating system of your choice in the hardware. See Related Articles and Resources for more information about provisioning operating systems.

Related Articles and Resources

The Oracle Enterprise Manager Ops Center 12c documentation is located at http://docs.oracle.com/cd/E40871_01/index.htm.

For more detailed information about firmware provisioning, refer to the following guides:

- Oracle Enterprise Manager Ops Center Feature Reference Guide
- Oracle Enterprise Manager Ops Center Administration Guide
- Oracle Enterprise Manager Ops Center Feature Reference Appendix Guide

See Deploy How To library at http://docs.oracle.com/cd/E40871_ 01/nav/deployhowto.htm.

See Operate How To library at http://docs.oracle.com/cd/E40871_ 01/nav/operatehowto.htm.

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